

R E M A R K S

By the above-identified office action, claims 1-12 and 14-18 were rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which allegedly was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Specifically, it was alleged that newly amended independent claims 1, 5, 10, 14-15 and 17 recite the limitation "capable of continual, perpetual, uninterrupted replay of sounds selected for individual replay," which limitation allegedly was "never disclosed before and therefore they are considered as new matters."

By the instant amendment, the limitation in question has been deleted and the claims in question have been amended to call for (1) play of the individual sound selected and (2) its repetitive replay so as to soothe the listener and mask noise without disrupting pauses.

As now amended, the inventive aspects of the claimed combinations as a whole of independent claims 1 and 14 call for, among other things, a collectible sound card, and a digital sound relaxation and noise masking device having a sound controller, cooperative therewith, 1.) to play and 2.) to repetitively replay individual sounds, selected from either said sound card or said digital sound relaxation and noise masking device, so as to provide sound environments that mask noise and soothe the listener without disrupting pauses.

The inventive aspects of the claimed combinations as a whole of independent claims 5 and 15 now call for, among other things, a digital sound relaxation and noise masking device adapted to mate with a collectible sound card, said digital sound relaxation and noise masking device having a sound controller that is operative 1.) to play and 2.) to repetitively replay individual sounds, selected from said sound card or from said digital sound relaxation and noise masking device, so as to provide sound environments that mask noise and soothe the listener without disrupting pauses.

The inventive aspects of the claimed combinations as a whole of independent claims 10 and 17 call for, among other things, a collectible sound card for use with a digital sound relaxation and noise masking device having a sound controller that is operative 1.) to play and 2.) to repetitively replay individual sounds selected from device memory so as to provide sound environments that mask noise and soothe the listener without disrupting pauses, to make its sounds available to said sound controller, which is operative 1.) to play and 2.) to repetitively replay individual sounds selected from said sound card so as to provide sound environments that mask noise and soothe the listener without disrupting pauses.

Reference may be had, among other places, to Figures 3, 6 and 7, and the corresponding portions of the specification, for support for the amended language. No new matter has been entered. As illustrated in Figure 6, for example, the sample of the sound selected is played as shown by the blocks 140, 142, 144, and 146; and as shown by the loop between blocks 140 and 146, the sample of the sound selected is replayed repetitively so as to provide sound environments

that mask noise and soothe the listener without disrupting pauses. As illustrated in Figure 3A, the start and end locations of sounds stored in the disclosed loop format are acoustically seamless, creating, upon playback, sound environments that mask noise and soothe the listener without disrupting pauses. As illustrated in Figure 3B, different, complete-in-themselves versions of sounds stored in the disclosed sound bite format are replayed at random, and at random times, creating, upon playback, sound environments that mask noise and soothe the listener without disrupting pauses.

Accordingly, it is respectfully submitted that the 35 U.S.C. 112, first paragraph, rejection is now overcome and need not be further discussed. It should be noted for the record, however, that the applicants believe the limitation in question indeed has been disclosed in compliance with 35 U.S.C. 112.

The Traversal of the 103 Obviousness Rejection of Record

By the above-identified office action, claims 1-12 and 14-18 have been rejected under 35 U.S.C. 103 (a) as unpatentable over Loudermilk in view of Grewe et al. Specifically, all six independent claims are treated together in terms of the rejection of independent claim 1, and, as to independent claim 1, it was alleged: A.) that it would be obvious to modify the "digital sound entertaining system having built-in prerecorded sounds selectable for individual replay" of Loudermilk, which admittedly does not "show the system has a collectible sound card," and does not "teach that . . . audio signals are capable of continual, perpetual and uninterrupted replay,"

with the semiconductor music chip of Grewe et al., which allegedly teaches "it is a well known practice to make a computer system which can access with external memory chips (see 16) so that external data could have been provided to the user as well as internal data. Therefore it would have been obvious . . . to modify the device of Loudermilk with the teachings of Grewe (sic) so that more choices of audio information could have been provided to users"; B.) that it would be obvious to substitute a collectible sound card for the music chip "of the device of Loudermilk as modified by Grewe (sic)," allegedly since music chips and collectible sound cards are well known alternative memory devices "which could have been (sic) enabled the device [of Loudermilk as modified by Grewe et al. to] work equivalently well"; and C.) it was alleged and official notice was taken that "audio signals stored in a loop format or a sound bite format are well-known in the art . . . And therefore, the system of Loudermilk as modified [by Grewe et al.] would have a capability of such claimed continual, perpetual and uninterrupted replay."

By the instant amendment, the claimed combinations as a whole of the independent claims 1, 5, 10, 14, 15 and 17 have been amended to each include the limitations discussed above in connection with the traversal of the 112 rejection, as well as to better define the invention and to further patentably distinguish the present invention over the rejection of record.

Dependent claims 2, 3, 4, 6, 7, 8, 9, and 16 have been amended to recite "noise masking" and/or to provide proper antecedent basis; and independent claims 5 and 10 in addition have been further amended to delete "natural," as have each of the dependent claims 8, 9, 11 and 12.

New multiply dependent claim 19 has been added. It depends off of any one of claims 1, 5, 10, 14, 15 and 17, and is drawn to the disclosed sound bite format that defines at least two different self-contained and complete-in-themselves versions of the same sound and cooperative sound controller of the present invention. New multiply dependent claim 19 calls for, among other things, a sound controller operative to play sounds stored in the disclosed sound bite format by (1) randomly choosing a version of the selected sound; (2) randomly choosing a time when to replay it; (3) replaying the randomly chosen version of the sound selected at the randomly chosen time; and (4) repeating (1) through (3) for the duration of playback. Support therefor may be found, among other places, in Figure 7 and the accompanying portion of the specification (p. 15, ll. 21-31; p. 16, ll. 1-22). No new matter has been entered.

A. Even if Loudermilk is modified by sound storage techniques, Loudermilk so modified does not render obvious what it is relied upon to render prima facie obvious.

Loudermilk is concerned to provide audio correlated pictures, and, to that end, discloses a "talking" picture frame having an audio message circuit that replays a specific audio message that corresponds to a specific picture mounted in the frame, such as a mother's voice when a child presses a button associated with a mother's picture, or a lion sound when a button is depressed that corresponds to a lion's picture.

Such a "digital sound entertaining system having built-in prerecorded sounds selectable for individual replay," drawn in fact to an educational or novelty "talking" picture frame, however,

is completely unrelated to, and therefore does not teach or even remotely suggest, the recited digital sound relaxation and noise masking device having a memory storing individual sounds and a sound controller coupled to the digital memory and operative 1.) to play any sound selected and 2.) to repetitively replay the individual sound selected so as to create sound environments that mask noise and soothe the listener without disrupting pauses of the inventive aspects of the claimed combinations as a whole of the independent claims of the instant invention. The sounds intended to be reproduced by its audio message circuit are of a type that are to be correlated with the visual content of a picture so as to provide a "talking" picture frame for novelty or educational purposes. Nowhere therefore is there any disclosure whatsoever to provide a digital sound relaxation and noise masking system or device, and nowhere any teaching, express or by necessary implication, of a sound controller operative to play and repetitively replay selected sounds to provide sound environments that soothe the listener and mask noise without disrupting pauses as in the present invention.

Nor would the mere knowledge of loop format and/or sound bite storage techniques convert an otherwise unrelated audio message circuit for Loudermilk's "talking" picture frame into a digital sound relaxation and noise masking system having the recited sound controller as in the claimed combinations as a whole of the present invention. For even assuming *arguendo* that such storage techniques are well known, and further assuming *arguendo* that one skilled in the art would employ such techniques in Loudermilk's picture frame, which they would not, the combination, at best, could only provide a "talking" picture frame having an audio message circuit

in which audio is stored in loop or sound-byte format operative to correlate specific audio messages to specific pictures for educational or novelty purposes. But so long as it were to remain what it was intended to be, its "talking" picture frame would not and could not be converted into the recited digital sound relaxation and noise masking device having the recited sound controller operative to play and repetitively replay individual sounds selected so as to provide sound environments that mask noise and soothe the listener without disrupting pauses of the inventive aspects of the claimed combinations as a whole of the present invention. Where an allegedly obvious modification would convert one device drawn to one purpose into another device drawn to some other, wholly unrelated purpose (an educational or novelty "talking" picture frame as opposed to a digital sound relaxation and noise masking system, or device), there can be no valid teaching to so modify the one device. Therefore, the application of the allegedly well-known storage techniques to Loudermilk does not render obvious the recited digital sound relaxation and noise masking device having an internal memory and a digital sound controller coupled thereto and operative 1.) to play any sound selected and 2.) to repetitively replay the individual sound selected so as to create sound environments that mask noise and soothe the listener without disrupting pauses of the inventive aspects of the claimed combinations as a whole of present invention. Accordingly, it is respectfully submitted the rejection of record must for these reasons be reconsidered and withdrawn.

B. There is no objective reason from the Loudermilk reference from which one skilled in the art would modify it by applying loop and/or sound-bite storage techniques thereto.

Nor is there any objective reason from the Loudermilk reference, and from loop and sound-byte storage techniques as such, warranting their combination in the manner proposed by the rejection of record. Since Loudermilk's audio message circuit is only employed to correlate specific audio messages to specific pictures to provide a "talking" picture frame for educational or novelty purposes, which performs its intended function as soon as a specific audio message corresponding to a specific picture is replayed by touching a button corresponding to a specific picture, one skilled in the art simply could have no motivation to include the disclosed loop or sound-bite data storage therein. Rather, such storage techniques would be of no moment to one of skill in the art having knowledge of Loudermilk's educational or novelty "talking" picture frame, and, if applied therein, in fact would render it inoperative for its intended educational or novelty purposes.

Because "the mere fact that the prior art could be modified in the manner proposed by the examiner would not have made the modification obvious unless the prior art suggested the desirability of the modification," *Ex parte Dussand*, 7 USPQ2d 1818, 1820 (Bd. Pat. App. & Int'f 1988), but since the proposed modification would render the Loudermilk reference inoperative for its intended educational or novelty purposes (and/or be of no practical interest) rather than be desirable therein, there simply is not, and cannot be, any objective reason from the Loudermilk

reference from which one skilled in the art would modify it by applying loop and/or sound-bite storage techniques thereto.

Accordingly, it is respectfully submitted that the rejection of record for these additional reasons alone must be reconsidered and withdrawn.

C. The combination of Loudermilk and Grewe et al. does not render obvious what it is relied upon to render prima facie obvious.

Grewe et al. are concerned to provide a remotely controlled computerized semiconductor music chip player. The elements 16 relied upon in the above-identified office action constitute the semiconductor music chips, which are played by the remotely controlled computerized semiconductor music chip player disclosed therein.

The semiconductor music chips are played by the remotely controlled computerized semiconductor music chip player in the same way that records are played by a record player. However, without a record player, records are useless. And in the same way, without a computerized semiconductor music chip player, semiconductor music chips are useless.

Since Loudermilk is concerned to provide a "talking" picture frame, but not a semiconductor music chip player, rather than render the present invention obvious to one of ordinary skill in the art, the provision of Grewe's et al. semiconductor music chips in Loudermilk's "talking" picture frame would either be useless and without practical effect therein, or would render Loudermilk inoperative for its intended educational or novelty purposes. Such

a "a computer system which can access with external memory chips," drawn in fact to a semiconductor music chip player, does not teach, expressly or by necessary implication, the provision of "external data . . . as well as internal data" to render it obvious "to modify the device of Loudermilk with the teaching of Grewe (sic) so that more choices of audio information could have been provided to users." Because Loudermilk's educational or novelty "talking" picture frame itself is not a semiconductor music player, the provision of semiconductor music chips in Loudermilk's educational or novelty "talking" picture frame, in point of fact, would be useless and without effect therein. But because such a modification would be useless rather than desirable therein, it does not and cannot render obvious to one of ordinary skill in the art the recited collectible sound card and cooperative digital sound relaxation and noise masking device sound controller of the inventive aspects of the claimed combinations as a whole of the present invention. And if the semiconductor music chips of Grewe et al. that function as records function in a record player were nonetheless incorporated into Loudermilk, Loudermilk would have to be converted into or somehow be made to function as a semiconductor music chip player. But because such a modification would, in point of fact, render Loudermilk inoperative for its intended novelty or educational purposes rather than be desirable therein, it does not and cannot render obvious to one of ordinary skill in the art the recited collectible sound card and cooperative digital sound relaxation and noise masking device sound controller of the inventive aspects of the claimed combinations as a whole of the present invention.

Accordingly, it is respectfully submitted that the rejection of record for these further reasons alone must be reconsidered and withdrawn.

Assuming arguendo the equivalence of semiconductor music chips and collectible sound cards, which are not equivalent because they function in different ways to obtain different results, since the combination of Loudermilk and Grewe et al. fails for the foregoing reasons to render obvious the inventive aspects of the claimed combinations as a whole of the present invention, the combination of Loudermilk and Grewe et al. as so modified likewise would fail to teach or suggest the inventive aspects of the claimed combinations as a whole of the present invention, rendering moot further discussion of the allegation that semiconductor music chips and collectible sound cards are merely convertible, "well known alternative memory devices which could have been (sic) enabled the device [of Loudermilk as modified by Grewe et al. to] work equivalently well."

D. There is no objective reason from the Grewe et al. reference from which one skilled in the art would see fit to combine it with Loudermilk.

Nor is there any objective reason from the Loudermilk and Grewe et al. references motivating their combination, expressly or by necessary implication. Since Grewe's et al. semiconductor music chips are only usable on semiconductor music chip players but otherwise are useless, while Loudermilk's audio message circuit is only concerned to provide specifically correlated audio and visuals in an educational or novelty "talking" picture frame, there can be no objective reason from the references of the rejection of record warranting their combination:

concerned with different and wholly unrelated problems, the references are in fact non-analogous, and cannot properly be combined.

Furthermore, assuming *arguendo* that Loudermilk discloses a "digital sound entertaining system having built-in prerecorded sounds selectable for individual replay," and further assuming *arguendo* that Grewe et al. disclose a "computer system which can access with external memory chips (see 16)," the reasoning regarding placing such an "external memory" in the Loudermilk reference totally ignores the overriding fact that the Grewe et al. reference gives absolutely no reason why such an "external memory" should be added to a "digital entertainment system" such as that of Loudermilk. Where two devices are implemented in mutually exclusive ways (built-in sounds as opposed to external semiconductor music chips) and drawn to different purposes (a "talking" picture frame as opposed to a semiconductor music chip player), there can be no valid teaching concerning merging them.

Accordingly, it is respectfully submitted that the rejection of record for these further reasons alone must be reconsidered and withdrawn.

Secondary Considerations of Non-Obviousness--Commercial Success

Enclosed herewith is a declaration of Mr. Troy Anderson, which is believed to establish a nexus between the inventive aspects of the claimed combinations as a whole of the above-captioned invention and the commercial success of products embodying the present invention, and is hereby submitted as secondary considerations of the non-obviousness of the present invention.

As evidenced by paragraph 1 thereof, Mr. Anderson has a masters degree in business, is a co-inventor of the above-captioned invention, and is Vice President of Headwaters Research & Development, Inc., the owner of the above-captioned invention.

As evidenced by paragraph 2 thereof, as Vice President of Headwaters Research & Development, Inc., among other things, he is responsible for selling and marketing new products for world markets and for evaluating consumer responses to the products developed in order to monitor product acceptance and insure present and future consumer satisfaction.

As evidenced by paragraph 3 thereof, digital sound relaxation and noise masking devices represent a unique category of consumer products that are designed to alleviate stress and to promote a state of relaxation and calm.

As evidenced by paragraph 4 thereof, these devices simulate a natural or other sound environment that masks noise and soothes the listener without disrupting pauses.

As evidenced by paragraph 5 thereof, due to stress and noise not uncommon in modern Western societies, there is a considerable need for such devices.

As evidenced by paragraph 6 thereof, the present United States market for such devices is estimated at about 60 million dollars annually, which is expected to grow at a per annum rate of about 30 percent.

As evidenced by paragraph 7 thereof, the above-captioned invention is drawn to improved-customizability digital sound relaxation and noise masking devices that permit customers to

customize the library of available sounds to their individual tastes and personal preferences by collecting collectible sound cards.

As evidenced by paragraph 8 thereof, in one of its inventive aspects, the claimed combinations as a whole of the independent claims 1 and 14 of the above-captioned invention call for, among other things, a collectible sound card, and a digital sound relaxation and noise masking device, cooperative therewith, in another of its inventive aspects, the claimed combinations as a whole of the independent claims 5 and 15 call for, among other things, a digital sound relaxation and noise masking device adapted to mate with a collectible sound card, and in another of its inventive aspects, the claimed combinations as a whole of the independent claims 10 and 17 call for, among other things, a collectible sound card for use with a digital sound relaxation and noise masking device.

As evidenced by paragraph 9 thereof, Headwaters Research & Development, Inc. and its affiliates ("Headwaters") currently markets four (4) collectible sound cards as detailed in Attachment "A" thereto.

As evidenced by paragraph 10 thereof, Headwaters sells under its Tranquil Moments® marks a line of commercially successful improved-customizability digital sound relaxation and noise masking devices in accord with the above-captioned invention, which have received consumer acceptance to the amount of about 10 million dollars per annum, which is about 17 percent of the estimated present annual United States market for digital sound relaxation and noise masking devices.

As evidenced by paragraph 11 thereof, Headwaters includes an owner's reply card with each improved-customizability digital sound relaxation and noise masking device in accord with the above-captioned invention sold under the Tranquil Moments® marks, and compiles information from those that are returned as well as from sales and other data.

As evidenced by paragraph 12 thereof, consumer feedback to the Tranquil Moments® products has indicated the first importance of sound variety to owners of improved-customizability digital sound relaxation and noise masking systems of the embodiment of Figures 1-7 in accord with the present invention as detailed in Attachment "B" thereto, which shows a bar chart compiled from 228 owner's reply cards from the years 1996-1997.

As evidenced by paragraph 13 thereof, the first importance of sound variety is believed on the one hand to be due to owner's different tastes in sounds. For example, one owner of a digital sound relaxation and noise masking device may prefer the sound of Rain Falling on a Tin Roof because it reminds them of similar cozy, rainy nights as a child, while another owner may prefer the sounds of Ocean Surf with Seagulls, because it reminds them of their favorite Hawaiian vacation. Since the heretofore known digital sound relaxation and noise masking devices only included a limited selection of built-in sounds, the collectible sound cards of the improved-customizability digital sound relaxation and noise masking devices of the present invention provide customers with an expanded selection of sounds from which to choose, thereby increasing the probability that owners can find their ideal sound(s).

As evidenced by paragraph 14 thereof, the first importance of sound variety is believed on the other hand to be due to owner's different use situations and different moods. It is known that a large percentage of digital sound relaxation and noise masking device owners alternate between available sounds. Some do this for variety, others do it to suit different use situations or moods. For example, some owners may prefer a good noise blocking sound like a Waterfall for use at the office, while at home they may prefer the gentler Rain sound for relaxation. The collectible sound cards of the improved-customizability digital sound relaxation and noise masking devices in accord with the present invention provide a much larger repertoire from which users can find satisfactory sounds to fit the usage situation and prevailing mood.

As evidenced by paragraph 15 thereof, both to accommodate individual user's different tastes in sounds and to accommodate different use situations and changing moods, the inventive aspects of the claimed combinations as a whole in accord with the improved-customizability digital sound relaxation and noise masking devices of the present invention help satisfy what consumer response has indicated as the first importance of sound variety to owner's of digital sound relaxation and noise masking devices.

As evidenced by paragraph 16 thereof, five (5) representative owner's reply cards attached as Attachment "C" thereto detail the general importance of digital sound relaxation and noise masking devices to individual owners of improved-customizability digital sound relaxation and noise masking devices in accord with the present invention, and five (5) representative owner's reply cards attached as attachment "D" thereto detail the specific importance of the inventive

aspects of the claimed combinations as a whole of the improved-customizability digital sound relaxation and noise masking devices in accord with the present invention.

As evidenced by paragraph 17 thereof, moreover, consumer response has indicated that two (2) out of three (3) owners of digital sound relaxation and noise masking devices traded under the Tranquil Moments® marks purchase at least one collectible sound card as detailed in Attachment "E" thereto, which shows a pie chart compiled from sales data for improved-customizability digital sound relaxation and noise masking devices in accord with the present invention for the years 1996-1997.

As evidenced by paragraph 18 thereof, since the devices adapted to mate with collectable sound cards sold under the Tranquil Moments® marks in accord with the above-captioned invention are not sold with collectable sound cards, the fact that the overwhelming majority of owners of these devices go on to purchase one or more collectable sound cards, which are individually packaged and separately sold, underscores that the inventive aspects of the claimed combinations as a whole of the present invention are a principal factor motivating the commercial success of the Tranquil Moments® products in accord with the above-captioned invention.

Conclusion

For the foregoing reasons, and in view of the recitations of the Declaration of Mr. Troy Anderson that are believed to evidence the non-obviousness of the inventive aspects of the claimed combinations as a whole of independent claims 1, 5, 10, 14, 15, and 17 of the present invention

on the basis of the commercial success of devices embodying the principles of the present invention, reconsideration, reexamination and early allowance of the entire case are now believed to be in order, and such action is hereby respectfully requested. Since the independent claims are in allowable condition, the dependent claims 2-4, 6-9, 11, 12, 16, 18, and 19 are also in allowable condition, and need not be further discussed.

It may be noted, however, that as to the recited port of claim 2, Figure 2 of Loudermilk, and the accompanying portion of the specification thereof, disclose that the "port" is merely a standard interface that only allows writing sounds into internal memory, but nowhere teaches or even remotely suggests the recited port for receiving a collectible sound card, which port includes an electrical connector, and wherein said collectible sound card is adapted for insertion in said port and includes a connector adapted to mate with said connector of said port when inserted therewithin as in claim 2, and claim 5, of the present invention.

It may also be noted that the recited sound bite format of claims 9 and 12 is not well known, but rather the recited "sound bite" format defining at least two groups of addressable memory locations, such that another self-contained and complete-in-itself version of the same sound is stored in each of said at least two groups of addressable memory locations is believed to be novel to the applicants and unobvious to one of ordinary skill in the art from the references of the rejection of record.

Nor does the Morris et al. reference show that the recited sound bite format is well-known in the art. For the Morris et al. reference discloses a method for transmitting data over telephone

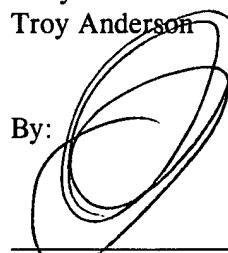
lines, which method separates the data into segments and transmits the segments concurrently to increase transmission bandwidth, but nowhere teaches or even remotely suggests the recited "sound bite" format of the inventions of claims 9, 12 and 19.

The applicants invite a telephone call to their undersigned representative to discuss any remaining question or amendment that the examiner believes may still be needed to place the claims in allowable condition, and hereby respectfully request a personal interview before the next office action in order to facilitate the further prosecution of the above-captioned invention.

Respectfully submitted,

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